

#11 p 963 lesson 7.3 (bottom)

$$(1x^3 + 3x + 4) \div (x + 1)$$

$$\begin{array}{r} -1 \overline{) 1 \ 0 \ 3 \ 4} \\ \underline{-1 \ 1 \ -4} \end{array}$$

$$\begin{array}{r} x + 1 = 0 \\ - \quad - \\ x = -1 \end{array}$$

$$1 \ -1 \ 4 \ 0$$

$$1x^2 - x + 4$$

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$$(x^3 - 5x^2 - 2x + 24) \div (x - 3)$$

$$\begin{array}{l} x - 3 = 0 \\ +3 \quad +3 \\ \hline x = 3 \end{array}$$

$$\begin{array}{r|rrrr} 3 & 1 & -5 & -2 & 24 \end{array}$$

$$\begin{array}{r|rrrr} & 3 & -6 & -24 & \\ \hline & 1 & -2 & -8 & 0 \end{array}$$

$$1x^2 - 2x - 8$$

$$y = x^2 - 5x + 6$$

$$x^2 - 5x + 6 = 0$$

$$y_1 = (x-2)(x-3)$$

$$x-2=0$$

$$+2 \quad +2$$

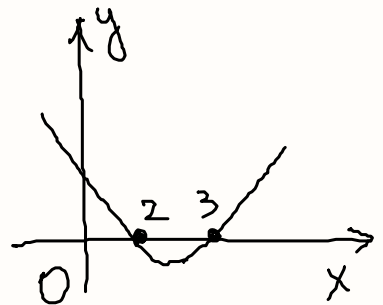
$$x_1 = 2$$

$$x-3=0$$

$$+3 \quad +3$$

$$x_2 = 3$$

$$(x-2)(x-3)=0$$



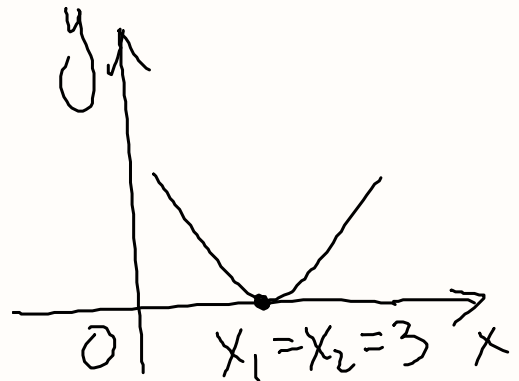
$x_1 = 2$ AND $x_2 = 3$ ARE THE SOLUTIONS (ROOTS) OF THE GIVEN EQUATION. AT THESE VALUES OF x , $y = 0$. GRAPH WILL INTERCEPT AXIS x .

$$y_1 = (x-3)^2$$

$$y_2 = (x-3)(x-3)$$

$$y_3 = x^2 - 6x + 9$$

$$x_1 = x_2 = 3$$



WE HAVE TWO ANSWERS WHICH ARE THE SAME
THE ROOT $x=3$ HAS A MULTIPLICITY OF TWO.

ROOT=SOLUTION. THE GRAPH TOUCHES
AXIS x WITHOUT CROSSING IT.

$$x^2 + (-1) = 0$$

$$x^2 = -1$$

$$i^2 = -1$$

$$x_{1,2} = \sqrt{-1}$$

NO REAL ANSWER

$$x_1 = -i$$

$$x_2 = i$$

